

## INLAND NAVIGATION.

## STAGE OF WATER IN RIVERS AND HARBORS.

Saint Paul, Minn.: the steamer "Mary Morton," drawing about three feet of water, was unable to reach this place on the 2d on account of low water in the Mississippi River.

The steamer "Sidney" arrived from Saint Louis on the 24th, she was the first of the regular through boats to arrive here since the close of last month.

Chattanooga, Tenn.: boats of low draught resumed their regular trips on the Tennessee River on the 3d.

In the following table are shown the danger-points at the various stations, the highest and lowest depths for September, 1888, with the dates of occurrence and the monthly ranges:

*Heights of rivers above low-water mark, September, 1888 (in feet and tenths).*

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Date.	Height.	Date.	Height.	
<i>Red River:</i>						
Shreveport, La. ....	29.9	15	12.4	1	5.2	7.2
<i>Arkansas River:</i>						
Fort Smith, Ark. ...	22.0	1	13.3	27, 28	1.2	12.1
Little Rock, Ark. ...	23.0	3	14.4	30	2.4	12.0
<i>Missouri River:</i>						
Omaha, Nebr. ....	18.0	1, 2	8.4	29, 30	6.3	2.1
Leavenworth, Kans. ...	20.0	1	10.7	29, 30	6.6	4.1
<i>Mississippi River:</i>						
Saint Paul, Minn. ...	14.5	10, 11, 15, 16, 18, 19	3.3	6, 7	2.8	0.5
La Crosse, Wis. ....	24.0	1	4.7	16, 27, 30	3.7	1.0
Dubuque, Iowa. ....	16.0	1	5.0	18	3.3	1.7
Davenport, Iowa. ....	15.0	1	3.9	21, 30	2.0	1.9
Keokuk, Iowa. ....	14.0	1	3.9	20, 21	1.6	2.3
Saint Louis, Mo. ....	32.0	1	12.7	29, 30	6.2	6.5
Cairo, Ill. ....	40.0	1	24.1	30	13.1	10.0
Memphis, Tenn. ....	34.0	3	20.0	27	11.6	8.4
Vicksburg, Miss. ....	41.0	9	25.0	30	14.1	10.9
New Orleans, La. ....	13.0	24, 25	7.5	29, 30	4.8	2.7
<i>Ohio River:</i>						
Pittsburg, Pa. ....	22.0	9	10.6	8	2.1	8.5
Parkersburg, ....	.....	17	12.5	30	4.0	8.5
Cincinnati, Ohio. ....	50.0	21	22.2	30	9.4	12.8
Louisville, Ky. ....	25.0	23	8.9	30	6.2	2.7
<i>Cumberland River:</i>						
Nashville, Tenn. ...	40.0	10	20.3	22	2.9	17.4
<i>Tennessee River:</i>						
Chattanooga, Tenn. ...	33.0	19	11.5	1	3.5	8.0
<i>Monongahela River:</i>						
Pittsburg, Penn. ....	29.0	9	10.6	8	2.1	8.5
<i>Savannah River:</i>						
Augusta, Ga. ....	32.0	11	38.7	30	10.5	28.2
<i>Willamette River:</i>						
Portland, Oregon. ....	.....	5	5.1	25, 28	1.2	3.9

## FLOODS.

The excessively heavy rainfalls in the south Atlantic and east Gulf states during a greater portion of the first and a part of the second decade of the month caused destructive freshets. Lowlands were inundated and great damage was caused to the cotton crops.

Flemingsburg, Flemings Co., Ky.: a cloud-burst washed out trestling, bridges, and fills, on the Cincinnati and Southwestern Railroad between this place and Hillsborough on the 1st. The greatest loss fell on the tobacco planters.

Charleston, W. Va.: a flood in the New River on the 5th carried away a large iron bridge on the Chesapeake and Ohio Railroad at Grand View, involving a loss of \$50,000. Other damage was also reported.

Hot Springs, Ark.: a destructive cloud-burst occurred on the 7th at 11 p. m., advancing from the northwest. The rain fell in torrents for two hours. Hotels were flooded to a depth of four feet; many buildings were torn down; five lives were lost, and several persons were missing. Damage to property estimated at \$100,000. Wilmington, N. C.: heavy rains for eight days previous to the 7th caused serious injury to the cotton crop, and the lowlands were inundated by the overflow of the Cape Fear River.

Columbus, S. C.: advices of the 8th state that the crops along the Congaree River have been damaged by the floods to the extent of \$1,000,000. The river rose twenty feet above low water mark.

Augusta, Ga., 10th: a flood is now desolating this city. The streets are filled with water to a depth of several feet, causing an entire suspension of business. In the freshet of 1840, the severest previously experienced, the water did not reach its present height by fifteen inches.

Danville, Va., 10th: dangerous floods were reported along the Dan River.

Atlanta, Ga.: the rain-storm of the 15-16th caused the heaviest rainfall in twenty-four hours (6.23 inches) that has occurred since the establishment of the Signal Service station in 1878. Great damage was done to the cotton crop and by washing out of railroads.

Port Jervis, N. Y.: the Delaware River overflowed on the 17th, causing much damage along its banks and along the line of the Delaware and Hudson Canal.

Newburg, N. Y.: heavy rain fell during the night of the 17-18th. Land slides and washouts occurred on the railroads; at Middletown, N. Y., heavy rains caused washouts along the lines of railroads centring at that place.

Waupaca, Waupaca Co., Wis.: on the 18th high water caused damage amounting to \$38,000.

Easton, Pa.: reports of the 18th show that much damage was caused to railroads and private property by the heavy rains. Bridges were washed away, and railroad traffic was almost entirely suspended. Philadelphia, Pa.: the severe rain-storms which began on the 16th caused a flood in the Schuylkill. Much damage was done to property.

Laredo, Tex.: a cloud-burst occurred on the night of the 20th twenty-eight miles above this place, in the vicinity of the Santa Loma coal mines. The Rio Grande River rose eight feet, and the tracks of the Rio Grande and Eagle Pass Railroad were badly washed.

Paterson, N. J.: advices of the 21st state that enormous damage was caused along the Passaic River by heavy rains. Houses, stock, and crops were swept away by the flood.

Pittsfield, Mass.: on the 21st thousands of acres of meadow land on the Housatonic R. R. between Great Barrington and Sheffield were flooded as the result of the heavy rains.

## HIGH TIDES.

Southport, N. C.: 10th, 12th, 15th, 20th, 24th. Galveston, Tex.: 6th, 7th. Key West, Fla.: 6th.

## ATMOSPHERIC ELECTRICITY.

## AURORAS.

Numerous feeble auroral displays were observed at various places in Dakota, Minnesota, and Wisconsin from the 7th to the 9th, and from the 11th to the 15th, none of which were of a noteworthy character except one seen at Fort Buford, Dak., on the 14th, of which the following report has been made: an aurora in the form of "merry dancers" began 1.48 a. m.; it consisted of luminous straw and white colored beams which reached an altitude of 45° and covering 60° of the horizon. The display ended 5.25 a. m.

Auroras were observed during the month as follows: 1st, Fort Buford, Dak., Saint Vincent, Minn. 2d, Moorhead, Minn. 7th, Garden City, Dak. 8th, Saint Vincent, Minn. 9th and 11th, Webster, Dak., Saint Vincent, Minn. 12th, Webster, Dak., Moorhead, Minn., Deuster, Wis. 13th, Independence, Iowa, Moorhead, Minn., Madison, Wis. 14th, Fort Buford, Dak., Madison and Weston, Wis. 15th, Webster, Dak. 17th, Poplar River, Mont. 24th, Cornish, Me. 26th, Cornish, Me., Wellsborough, Pa. 28th, Davenport, Dak., Hamilton, Pa. 29th, Orono, Me.